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I. *Tabula Motuum quinque Satellitum Saturni ad fidem nuperarum Observationum correctæ, Cœloque conformes reddita.*

Circa finem Anni 1686. D. Jo. Dom. Cassini, Reg. Soc. Sodalis, & in Astronomicis nemini secundus, cum Societate nostrâ inventa sua de motibus quinque Satellitum *Saturni* communicavit, Epochasque singulorum ad annum ineuntem 1686. eorumque motus diurnos in Epistola N° 187. harum *Transact.* editâ exhibuit: E quibus datis motuum Tabulas concinnavimus, dictæque Epistolæ subjunctas una edidimus. Cum vero deinde per triginta fere annos nullas omnino Observationes eorum tradiderint, qui soli poterant, Astronomi *Galli*; cumque aliunde, ob intervallum temporis nimis breve, non nisi laxè periodos Satellitum, præsertim interiorum, definire potuerit præclarissimus Inventor; non prius dictarum Tabularum defectus corrigere datum est, quam in nuperis Actis Academiæ Regiæ *Parisiensis* Physicis & Mathematicis, observata ea, quæ sub finem præcedentis *Transact.* N° 355. protulimus, prodire.

Horum vero ope facta aliquali Motuum castigatione, tum demum Telescopio *Hugeniano* omne Saturni Satellitum ipsi agnovimus; adhibitisque accuratis Rev. D. Jac. Pounsi observationibus, Tabulas subsequentes cœlo satis consonas obtinuimus. Addendo sc. motui annuo *Interioris*, $2^{\circ} 9'$; *Penultimi* vero $3^{\circ} 25'$ retentis Epochis D. Cassini ad Annum 1686. Augendo etiam motum annum *Extimi* 9 min. sublatis vero 16 grad. ab *Epocha*, quæ in Epistola dicta N° 187. perperam scribitur $\times 16^{\circ} 19'$, pro $\times 0^{\circ} 16'$. *Hugenianum* 6' annuatim tardiolem invenimus. *Tertii* autem Tabellas, ob motum diurnum falsò in Epistola illa traditum, de integro recudere necesse habuimus, retenta saltem *Epocha*.

Tabula

Tabula Mediorum Motuum Intimi Satellitis Saturni à Cassino detecti Anno 1686.

Annis Christi incunt	Epochæ s . o .	Annis	Mot. Med. s . o .	Diebus	Mot. Med. s . o .	H M	Mot. Med. S . o .	Min.	Motus Medi. s . o .
1681	8 48	1	4 4 43	1	6 10 42	10	7 57	3 4	6
1686	13 4	2	8 9 25	2	0 21 24	20	15 53	32 4	14
1701	6 34	3	0 14 8	3	7 2 6	30	23 50	33 4	22
1714	9 57	4	10 29 33	4	1 12 47	40	31 47	34 4	30
1715	14 39	5	3 4 16	5	7 23 29	50	39 44	35 4	38
1716	19 22	6	7 8 59	6	2 4 11	60	47 40	36 4	46
1717	4 47	7	11 13 42	7	8 14 53	70	55 37	37 4	54
1718	9 30	8	9 29 6	8	2 25 35	81	3 34	38 5	2
1719	14 13	9	2 3 49	9	9 6 17	91	11 31	39 5	10
1720	18 55	10	6 8 32	10	3 16 59	101	19 28	40 5	18
Mens Anni Com.	Mot. Med. s . o .	11	10 13 15	11	9 27 41	111	27 24	41 5	26
		12	8 28 40	12	4 8 22	121	35 21	42 5	34
		13	1 3 23	13	10 19 4	131	43 18	43 5	42
Jan.	0 0 0	14	5 8 5	14	4 29 46	141	51 15	44 5	50
Febr.	5 1 38	15	9 12 48	15	11 10 28	151	59 11	45 5	58
Mar.	3 1 10	16	7 28 13	16	5 21 10	162	7 8	46 6	5
April	8 2 48	17	0 2 56	17	0 1 52	172	15 5	47 6	13
Maii	6 23 44	18	4 7 39	18	6 12 34	182	23 1	48 6	21
Junii	11 25 22	19	8 12 21	19	0 23 16	192	30 58	49 6	29
Julii	10 16 19	20	6 27 46	20	7 3 57	202	38 55	50 6	37
Aug.	3 17 57	40	1 25 32	21	1 14 39	212	46 52	51 6	45
Sept.	8 19 35	60	8 23 19	22	7 25 21	222	54 49	52 6	53
Octob	7 10 31	80	3 21 5	23	2 6 3	233	2 45	53 7	1
Nov.	0 12 9	100	10 18 51	24	8 16 45	243	10 42	54 7	9
Dec.	11 3 5	120	5 15 37	25	2 27 27	253	18 39	55 7	17
In Anno Bissextili post Fe- briarium adde unus diei motum.				26	9 8 9	263	26 35	56 7	25
				27	3 18 50	273	34 32	57 7	33
				28	9 29 32	283	42 28	58 7	41
				29	4 10 14	293	50 25	59 7	49
				30	10 20 56	303	58 22	60 7	57

*Tabula Mediorum Motuum Satellitis Saturni
Penintimi, à Cassino detecti Anno 1686.*

<i>Annis Jul. incunt</i>	<i>Epocha s o .</i>	<i>Annis</i>	<i>Med. Mor. s o .</i>	<i>Diebus</i>	<i>Med. Mor. s o .</i>	<i>H M</i>	<i>Mot. Med. Sex o . "</i>	<i>Men. Motus Medi. o .</i>
1681	X 3 23	1	4 10 2	1	4 11 32	10	5 29	31 2 50
1686	♄ 5 25	2	8 20 4	2	8 23 4	20	10 58	32 2 56
1701	X 22 3	3	1 0 6	3	1 4 36	30	16 26	33 3 1
1714	♄ 7 5	4	9 21 40	4	5 16 8	40	21 55	34 3 7
1715	♄ 17 7	5	2 1 42	5	9 27 40	50	27 24	35 3 12
1716	♄ 27 9	6	6 11 44	6	2 9 12	60	32 53	36 3 17
1717	II 18 43	7	10 21 46	7	6 20 44	70	38 22	37 3 23
1718	♄ 28 45	8	7 13 20	8	11 2 16	80	43 51	38 3 28
1719	X 8 47	9	11 23 22	9	3 13 49	90	49 19	39 3 34
1720	♄ 18 49	10	4 3 24	10	7 25 21	100	54 48	40 3 40
<i>Mens. An. Co</i>	<i>Med. Mor. s o .</i>	11	8 13 26	11	0 6 53	110	0 17 4	3 45
		12	5 5 0	12	4 18 25	120	5 46	42 3 51
		13	9 15 2	13	8 29 57	130	11 15	43 3 56
<i>Jan.</i>	0 0 0	14	1 25 4	14	1 11 29	140	16 44	44 4 1
<i>Febr.</i>	3 27 34	15	6 5 6	15	5 23 1	150	22 13	45 4 7
<i>Mar.</i>	6 20 32	16	2 26 40	16	10 4 33	160	27 42	46 4 12
<i>Apr.</i>	10 18 6	17	7 6 42	17	2 16 5	170	33 11	47 4 17
<i>Maii</i>	10 4 7	18	11 16 44	18	6 27 37	180	38 39	48 4 23
<i>Junii</i>	2 1 41	19	3 26 46	19	11 9 9	190	44 8	49 4 28
<i>Julii</i>	1 17 43	20	0 18 20	20	3 20 41	200	49 37	50 4 34
<i>Aug.</i>	5 15 17	40	1 6 40	21	8 2 13	210	55 6	51 4 39
<i>Sept.</i>	9 12 51	60	1 25 0	22	0 13 45	220	0 35	52 4 45
<i>Oct.</i>	8 28 53	80	2 13 20	23	4 25 17	230	6 4	53 4 5
<i>Nov.</i>	0 26 27	100	3 1 4	24	9 6 49	240	11 32	54 4 56
<i>Dec.</i>	0 12 28	120	3 20 0	25	1 18 22	250	17 1	55 5 1
<i>In Anno Bissextili post Februa- rium adde unius diei motum.</i>				26	5 29 54	260	22 30	56 5 7
				27	10 11 26	270	27 59	57 5 12
				28	2 22 58	280	33 27	58 5 18
				29	7 4 30	290	38 56	59 5 23
				30	11 16 2	300	44 25	60 5 29

Tabula Mediorum Motuum Satellitis
Saturni Medii, à Cassino detecti Anno 1671.

<i>Annis</i> <i>Julia.</i> <i>ineunt</i>	<i>Epochæ</i> <i>s o .</i>	<i>Annis</i>	<i>Med. Motus</i> <i>s o .</i>	<i>Diebus</i>	<i>Med. Motus</i> <i>s o .</i>	<i>H</i> <i>M</i>	<i>Med. Mot</i> <i>Sex. o .</i>	<i>Med.</i> <i>Met.</i>
1681	12 16	1	9 17 2	1	2 19 41	1	3 19 31	1 43
1686	27 6	2	7 4 3	2	5 9 23	2	6 38 32	1 46
1701	1 17	3	4 21 5	3	7 29 4	3	9 58 33	1 49
1714	11 43	4	4 27 48	4	10 18 46	4	13 17 34	1 53
1715	28 45	5	2 14 50	5	1 8 27	5	16 36 35	1 56
1716	15 47	6	0 1 52	6	3 28 9	6	19 55 36	2 0
1717	22 30	7	9 18 53	7	6 17 50	7	23 15 37	2 3
1718	9 32	8	9 25 36	8	9 7 31	8	26 34 38	2 6
1719	26 34	9	7 12 38	9	11 27 13	9	29 53 39	2 10
1720	13 35	10	4 29 40	10	2 16 54	10	33 12 10	2 13
<i>Mens.</i>	<i>Med. Motus</i>	11	2 16 42	11	5 6 36	11	36 31 41	2 16
<i>Anni</i>		12	2 23 25	12	7 26 17	12	39 51 42	2 19
<i>Com.</i>	<i>s o .</i>	13	0 10 26	13	0 15 59	13	43 10 43	2 23
<i>Jan.</i>	0 0 0	14	9 27 28	14	1 5 40	14	46 29 44	2 26
<i>Febr.</i>	10 10 24	15	7 14 30	15	3 25 21	15	49 48 45	2 29
<i>Mar.</i>	0 21 44	16	7 21 13	16	6 15 3	16	53 8 46	2 33
<i>Apr.</i>	11 2 9	17	5 8 15	17	9 4 44	17	56 27 47	2 36
<i>Maii</i>	6 22 51	18	2 25 16	18	11 24 26	18	59 46 48	2 39
<i>Jun.</i>	5 3 16	19	0 12 18	19	2 14 7	19	3 5 49	2 43
<i>Julii</i>	0 23 58	20	0 19 1	20	5 3 49	20	6 24 50	2 46
<i>Aug.</i>	11 4 23	40	1 8 2	21	7 23 30	21	9 44 51	2 49
<i>Sept.</i>	9 14 47	60	1 27 4	22	10 13 11	22	13 3 52	2 53
<i>Oct.</i>	5 5 30	8	2 16 5	23	1 2 53	23	16 22 53	2 56
<i>Nov</i>	3 15 54	100	3 5 6	24	3 22 34	24	19 41 54	2 59
<i>Dec.</i>	11 6 37	120	3 24 7	25	6 12 16	25	23 1 55	3 3
<i>In Anno Bissextili post Februa-</i> <i>rium adde unius Diei motum</i>				26	9 1 57	26	26 20 56	3 6
				27	11 21 39	27	29 39 57	3 9
				28	2 11 20	28	32 58 58	3 13
				29	5 1 1	29	36 17 59	3 16
				30	7 20 43	30	39 36 60	3 19

Tabula Mediorum Motuum Penextimi Satellitis Saturni ab Hugenio inventi Anno 1655.

<i>Annis Jul. incunt</i>	<i>Epocha s o .</i>	<i>Annis</i>	<i>Med. Mot. s o .</i>	<i>Diebus</i>	<i>Med. Mot. s o .</i>	<i>No. Mo. s o .</i>	<i>Motus Med. s o .</i>
1641	♊ 2 48	1	10 20 35	1	0 22 35	0 56 31	29 10
1661	♋ 13 23	2	9 11 10	2	1 15 9	1 53 22	30 6
1681	♌ 27 58	3	8 1 45	3	2 7 44	2 49 33	31 3
1686	♍ 3 28	4	7 14 55	4	3 0 18	3 46 34	31 59
1701	♎ 12 33	5	6 5 30	5	3 22 53	4 42 35	32 55
1714	♏ 17 53	6	4 26 5	6	4 15 28	5 39 36	33 52
1715	♐ 8 28	7	3 16 40	7	5 8 2	6 35 37	34 48
1716	♑ 29 3	8	2 29 50	8	6 0 37	7 31 38	35 45
1717	♒ 12 13	9	1 20 25	9	6 23 12	8 28 39	36 41
1718	♓ 2 48	10	0 11 0	10	7 15 46	9 24 40	37 38
1719	♊ 23 23	11	11 1 35	11	8 8 21	10 21 41	38 34
1720	♋ 13 58	12	10 14 45	12	9 0 55	11 17 42	39 31
1721	♌ 27 8	13	9 5 20	13	9 23 30	12 14 43	40 27
<i>Mens. An. Co.</i>	<i>Med. Mot. s o .</i>	14	7 25 55	14	10 16 5	13 10 44	41 24
		15	6 16 30	15	11 8 39	14 7 45	42 20
<i>Jan.</i>	0 0 0	16	5 29 40	16	0 1 14	15 3 46	43 17
<i>Febr.</i>	11 9 54	17	4 20 15	17	0 23 48	16 0 47	44 13
<i>Mar.</i>	8 12 2	18	3 10 50	18	1 16 23	16 56 48	45 10
<i>Apr.</i>	7 21 55	19	2 1 25	19	2 8 58	17 52 49	46 6
<i>Maii</i>	6 9 14	20	1 14 35	20	3 1 32	18 49 50	47 3
<i>Junii</i>	5 19 7	40	2 29 10	21	3 24 7	19 45 51	47 59
<i>Julii</i>	4 6 26	60	4 13 45	22	4 16 42	20 42 52	48 56
<i>Aug.</i>	3 16 18	80	5 28 20	23	5 9 16	21 38 53	49 52
<i>Sept.</i>	2 26 12	100	7 12 55	24	6 1 51	22 35 54	50 49
<i>Oct.</i>	1 13 30	120	8 27 3	25	6 24 25	23 31 55	51 45
<i>Nov.</i>	0 23 24	140	10 12 5	26	7 17 0	24 27 56	52 42
<i>Dec.</i>	11 10 42	160	11 26 40	27	8 9 35	25 24 57	53 38
				28	9 2 9	26 20 58	54 35
				29	9 24 44	27 17 59	55 31
				30	10 17 18	28 13 60	56 27

In Anno Bissextili post Februarium adde unius diei motum.

*Tabula Mediorum Motuum Satellitis Saturni
Extimi, à Cassino detecti Anno 1671.*

<i>Annis Julia. ineunt</i>	<i>Epochæ</i>	<i>Annis</i>	<i>Med. Motus</i>	<i>Dies</i>	<i>Med. Motus</i>	<i>H</i>	<i>Mo. Me.</i>	<i>M</i>	<i>Med. Mot.</i>
<i>s o .</i>	<i>s o .</i>	<i>s o .</i>	<i>s o .</i>	<i>s o .</i>	<i>M</i>	<i>° ' "</i>	<i>° ' "</i>	<i>° ' "</i>	<i>° ' "</i>
1681	Υ 8 40	1	7 6 32	1	0 4 32	1	0 11 31	5 51	
1686	Υ 15 50	2	2 13 3	2	0 9 5	2	0 23 32	6 3	
1701	Ϟ 11 53	3	9 19 35	3	0 13 37	3	0 34 33	6 14	
1714	Ϟ 20 20	4	5 0 39	4	0 18 9	4	0 45 34	6 25	
1715	Ϟ 26 52	5	0 7 10	5	0 22 42	5	0 57 35	6 37	
1716	II 3 23	6	7 13 42	6	0 27 14	6	1 8 36	6 48	
1717	Υ 14 27	7	2 20 13	7	1 1 46	7	1 19 37	7 0	
1718	Ω 20 58	8	10 1 17	8	1 6 18	8	1 31 38	7 11	
1719	Ϟ 27 30	9	5 7 49	9	1 10 51	9	1 42 39	7 22	
1720	m 4 2	10	0 14 20	10	1 15 23	10	1 53 40	7 34	
<i>Mens. Anni Com.</i>	<i>Med. Motus</i>								
	<i>s o .</i>								
Jan.	0 0 0	11	7 20 52	11	1 19 55	11	2 5 41	7 45	
Febr.	4 20 41	12	3 1 56	12	1 24 28	12	2 16 42	7 56	
		13	10 8 27	13	1 29 0	13	2 27 43	8 8	
Mar.	8 27 46	14	5 14 59	14	2 3 32	14	2 39 44	8 19	
Apr.	1 18 27	15	0 21 30	15	2 8 5	15	2 50 45	8 30	
Maii	6 4 37	16	8 2 34	16	2 12 37	16	3 1 46	8 42	
Jun.	10 25 18	17	3 9 6	17	2 17 9	17	3 13 47	8 53	
Julii	3 11 27	18	10 15 37	18	2 21 42	18	3 24 48	9 4	
		19	5 22 9	19	2 26 14	19	3 35 49	9 16	
Aug.	8 2 9	20	1 3 13	20	3 0 46	20	3 47 50	9 27	
Sept.	0 22 50	21	2 6 26	21	3 5 18	21	3 58 51	9 38	
Oct.	5 8 59	22	3 9 38	22	3 9 51	22	4 9 52	9 50	
Nov.	9 29 4	23	4 12 51	23	3 14 23	23	4 21 53	10 1	
Dec.	2 15 50	24	5 16 4	24	3 18 55	24	4 32 54	10 12	
		25	6 19 17	25	3 23 28	25	4 43 55	10 24	
<i>In Anno Bissextili post Februa- rium adde unius Diei motum.</i>				26	3 28 0	26	4 55 56	10 35	
				27	4 2 32	27	5 6 57	10 46	
				28	4 7 5	28	5 17 58	10 58	
				29	4 11 37	29	5 29 59	11 9	
				30	4 16 9	30	5 40 60	11 21	

Motibus mediis Satellitum ad hunc modum constitutis, proveniunt Revolutiones eorum jam veris proximæ, scilicet

	D	h	'	"
<i>Primi sive Intimi</i>	1.	21.	18.	26 $\frac{1}{2}$
<i>Secundi Penintimi</i>	2.	17.	41.	10 $\frac{1}{2}$
<i>Tertii sive Medii</i>	4.	12.	25.	10
<i>Quarti Hugeni</i>	15.	22.	41.	28
<i>Quinti sive Extimi</i>	79.	7.	46.	00

Posito autem, juxta regulam Naturæ (saltem in hoc nostro Systemate) universalem quæque tam in Jovialium ac Lunæ motibus, quam Planetarum Primariorum circa Solem, obtinet, Vires centrum Saturni petentes esse in duplicata ratione distantiarum reciproçè, ac proinde Cubos distantiarum à centro esse ut quadrata Temporum periodicorum; ex data distantia & periodo *Hugeni*, fiunt reliquorum distantia ut sequitur.

	<i>Semidiam. Annuli</i>	<i>Semidiam. Globi h</i>
<i>Dist. Primi</i>	1.9289	4,3400
<i>Secundi</i>	2.4708	5,5593
<i>Tertii</i>	3.4508	7,7643
<i>Quarti</i>	8.0000	18,0000
<i>Quinti</i>	23.3146	52,4578

Quæ quidem distantia cum D. *Cassini* observatis satis quadrant. Quatuor autem interiores Satellites juxta planum Annuli Saturni orbitas suas describunt proximè; in plano. *sc.* Æquatoris nostri plano quoad sensum parallelo, quicquid in contrarium proferant nonnulli. Quintum vero orbem situ paulo diversum à cæteris describere, nuper apprehendit D. *Jac. Cassinus* prioris filius & virtutum hæres, ut videre est in Actis Academiæ Scientiarum *Parisiensis* Anni 1714. Sed hæc autem omnia propriis oculis contemplari, atque penitus introspicere jam ipsi accingimur.